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COMMUNITY-BASED APPROACHES TO MANAGE FOREST FIRES IN UTTARA KANNADA, YELLAPURA DIVISION, KARNATAKA – A SUCCESS STORY

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ABSTRACT

Forest fires always originate by one of two ways - naturally caused or human caused. Natural fires are generally started by lightning and comprises of a very small percentage (less than 1%) started by spontaneous combustion of dry fuel. On the other hand, human-caused fires are very common (more than 99%) and can be due to any reasons. Yellapura in Uttara Kannada district of Karnataka is one of the core forest areas in the Western Ghats. The forested area is the largest in Yellapura taluk; 87% of the geographical area is covered by forests. It consists of 3 subdivisions and 6 ranges, more than 70% of forest area is composed of dry deciduous forests. Teak is widely cultivated and highly vulnerable to forest ground fires. Forest fires can occur in any forest in the drier months and is an important factor to shape the vegetation and landscape. This case study in Yellapura, was carried out between 2017 – 2019, attempts to throw light on various factors that helped in curbing the forest fires to a great extent. It also sheds light on various community-based approaches employed in the villages near the forest fringes and showcases direct involvement of community in reducing the likelihood of forest fires in Yellapura taluk. After these community-based approaches were adopted, the results indicate a massive reduction in the fire alerts reported by Forest Survey India (FSI) in Manchikeri and Idagundi ranges.

KEYWORDS: Forest Fires, Community-based Approaches, VFC, Village Forest Committees, Beedhi Natakas, Benki Hatoti Tanda & Yellapura Taluk

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Original Article

INTRODUCTION

Forests undoubtedly are classified as a vital natural resource that provides and supports a plethora of environmental services. Forests are precious, as they deliver wide range of goods and services to the advantage of the society; goods such as timber, fuel wood, fodder, green manure, minor produce, medicines etc., and services such as soil conversation, hydrological regulation, carbon sequestration etc., are sources of biodiversity. Uttara Kannada district lies between 13 9220º N to 15 5252º N Latitude and 74 0852º E to 75 0999º E Longitude and covers an area of 10,291 km^2 [2]. The district is about 180km from north-south and 110km from west-east. Uttara Kannada is only district in Karnataka, which has a forested area of about 80% and falls in the region of Western Ghats. The district comprises of 11 taluks namely, Supa, Haliyal, Mundgod, Yellapura, Karwar, Ankola, Sirsi, Siddapura, Honnavara, Kumta and Bhatkal [2]. Yellapura, a taluk in Uttara Kannada district, covers an area of 1,313 km^2 with population density of 60 per km^2. There are 125 villages and 1 town in Yellapura taluk. The heaviest rainfall occurs in the months of June, July and August with, perhaps, stray showers in October. Thus, there is a prolonged dry season for 7 months when there is little or no rain. During the drier months, there is an

enhanced risk of forest fires. Forest fires are a driving factor in shaping forest vegetation and landscape in many parts of India. Even so, very little is known about the extent of these fires, the causes of ignition, and the role that fires play in local forest management practices and in the supply of forest services. Forests fire pose widespread risk to any forests and these fires are as primal as the jungles themselves. These fires are always a threat to the forest wealth including flora and fauna. These fires, when uncontrolled, tend to impair the natural balance between the various constituents in the region.

Forest fires always originate by one of two ways - naturally caused or human caused. Natural fires generally starts by lightning, with a very small percentage (less than 1%) starts by spontaneous combustion of dry fuel. On the other hand, human-caused fires can be due to any number of reasons and in larger extents (more than 99%). This case study particularly places emphasis on the importance of community involvement to prevent and control the forest fires, timely notification of the fires in the range using the existing forest fire management system. The literature on fires in Indian forests shows that they play a vital role throughout the country. Very few empirical studies have been done on the reasons for these fires, and in most cases, their origin remains unclear. Available evidence suggests that fires are employed to maintain the grass layer for cattle grazing and that they facilitate the collection of several non-wood forest products (NWFP).

STUDY AREA

The Yellapura forest division is a part of Kanara circle of Uttara Kannada district, consists of Mundgod and Yellapura taluks. It consists of 3 subdivisions and 6 ranges. The division is very susceptible to both forest offences and fire hazards. Taking into consideration various phenological and ecological conditions, the forests of Uttara Kannada can be divided into moist type (evergreen, semi-evergreen and moist deciduous) and dry type (dry deciduous and thorny forest). Champion and Seth (1968) identified the major vegetation of Uttara Kannada as west coast evergreen/semi-evergreen forest while Pascal (1982) in his vegetation maps (on 1:250000 scale) identified the vegetation of Uttara Kannada as belonging to the *Persea-Diospyros-Holigarna* series of wet tropical forest. The evergreen to semi-evergreen forests forms a major portion of the district especially towards the west which experiences copious rainfall. As rainfall declines towards the eastern portion, the forests change from moist deciduous to dry deciduous types [3]. Yellapura division consists of 3 subdivisions and 6 ranges, more than 70% of forest area is composed of dry deciduous forest, bearing Teak as the major crop and highly vulnerable to forest ground fire. To ensure, there were reduced incidences of forest fires within the division, many community-based proactive measures were taken.

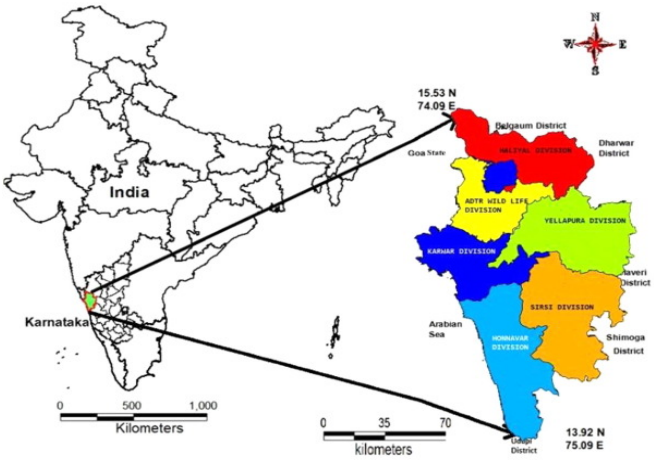

Figure 1

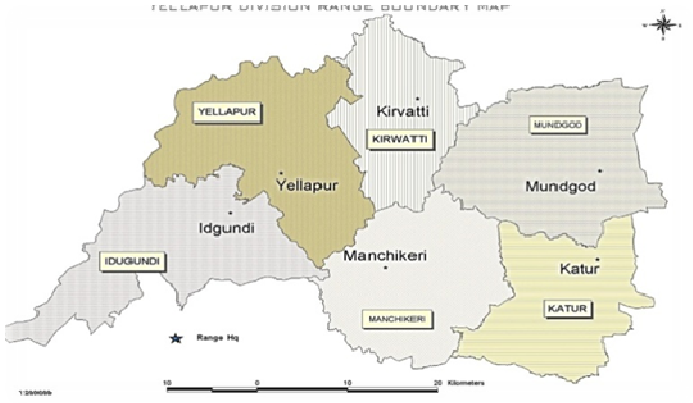

Figure 2

MATERIAL AND METHODS

Many community-based approaches were initiated to curb the incidences and spreading of the forest fires in the study area. The approaches include:

- Awareness Programs
- VFC Meetings
- Panchayath Meetings
- Beedhi Natakas
- 24/7 Fire Control Room
- Jathas
- Door-to-door campaigns
- Calendar Distribution
- Oath-taking by the locals
- Building of forest fire watch towers
- Award for fire protection
- Hasiru Pade

In addition to the above, a unique trial to setup ***BENKI HATOTI TANDA (FIRE CONTROL TEAM)*** to attend to the fire complaints swiftly yielded phenomenal results.

1. Awareness Programs

(a) Awareness Programs at Schools.

(b) Awareness Programs at Public Places.

Figure 3

1.1 At Schools

These programs were conducted at the division-level to raise the awareness of forest fires and its hazards. Awareness was spread within the local schools to report any forest fires they sight.

1.2 At Public Places

Posters having DO's and DONT'S about forest fires were displayed at prominent public places to create awareness. The posters placed also contained phone numbers of forest officials to report any forest fire incidents in the division.

2. Village Forest Committees (VFC) Meetings

Yellapura division consists of 111 VFCs and the fire awareness programs was given to all Presidents, Secretaries and VFC members in their respective areas.

Figure 4

Table 1

Sl. No	Range	VFC Meetings
1	Manchikere	18
2	Idagundi	12
3	Yellapura	15
4	Kirwatti	13
5	Mundgod	10
6	Katur	12

3. Panchayath Meetings

The team also involved the Grama Panchayath leaders and Taluk Panchayath leaders in the fire awareness program and conducted the various meetings to manage the forest fires.

Figure 5

Table 2

Sl. No	Range	Panchayath Meetings
1	Manchikere	5
2	Idagundi	3
3	Yellapura	4
4	Kirwatti	2
5	Mundgod	8
6	Katur	8

4. Beedhi Natakas

Beedhi Natakas (Street Plays) were performed in all ranges of the division to sensitise the locals about forest fires and its hazards, especially in the villages that were in the forest fringes by involving the local communities.

Figure 6

Table 3

Sl. No	Range	Beedhi Natakas
1	Manchikere	5
2	Idagundi	3
3	Yellapura	5
4	Kirwatti	4
5	Mundgod	3
6	Katur	5

5. 24/7 Fire Control Room

A 24/7 fire control room was setup at the DCF office, and the phone number was widely circulated among the local communities to notify the fire incidences immediately to the department.

Figure 7

6. Jathas

Periodic jathas were conducted in the fire-prone areas involving local public, school children, villagers, officials and other renowned persons including political leaders.

Figure 8

7. Door-to-Door Campaigns

Pamphlets were prepared by involving Forest department and Sri Dharmasthala Grameena Abhivruddhi Sangha to deter communities from involving in any illegal activities in the forest, including lighting of forest fires, theft or poaching by taking a vow in the name of the Lord Manjunateshwara.

Figure 9

8. Calendar Distribution

5000 Calendars were released and distributed to all the villagers residing in the fringes of the forest area. This gesture brought in a sense of belongingness between the communities and local public with the forest department.

Figure 10

9. Oath-Taking by the Locals

Meetings were conducted in the village temples and sacred areas of local deities. People in the rural areas and fringe villages strongly believe that, by taking the oath in the name of local gods, their involvement in forest crime including illegal activity, forest fires etc., declines. The locals took oath in name of Lord Manjunateshwara of Dharmasthala and Siddhi communities took oath by touching the soil.

Figure 11

10. Building of Forest Fire Watch Towers

Fire watch towers were built especially in the areas where the mobile network coverage was available. These watch towers were tall and built to monitor and have overall visibility of the whole range. This ensured the response time to put out for any forest fire seen reduced to a great extent.

Figure 12

11 Award for Fire Protection

The best performing VFC were recognised and were awarded □25000 to best VFC in protection. Other VFCs were given □5000. Camera Trap in sensitive areas of the VFC Informants was appointed in the sensitive VFC areas.

12. Hasirupade

Hasiru Pade, a dedicated team including the Dy RFO, Guards and watchers are formed to reduce the response time of the fire extinguishing process.

Figure 13

Benki Hatoti Tanda

A dedicated team comprising of the Dy RFO, Guards and watchers are formed to reduce the response time of the fire extinguishing process inaccessible areas. This ***Tanda*** was prepared with all the fire extinguishing equipment along with other essentials to tackle the forest fires at the earliest.

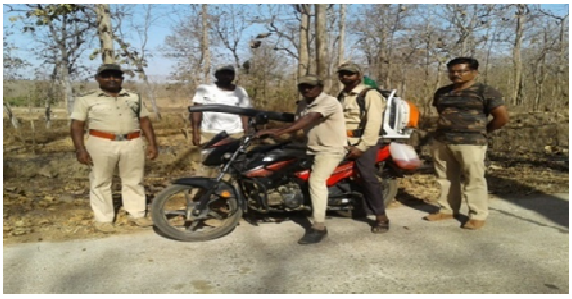

Figure 14

RESULTS AND DISCUSSIONS

Total area of Yellapura division is 168986.78 Ha. Before the community-based approaches were initiated, the forest fires reported were about 5–7% of the forest area, and alerts received from FSI would be in 4 digits always. In the previous years, the response time was very protracted as only hired watchers, labourers and department personnel were involved in the fire extinguishing process. Also, the area impacted by forest fires was larger. As seen from the graph, after implementing the community-based measures, the fire alerts in the year 2018–19 have drastically reduced. In case of Yellapura division, the incidence of fire alerts has reduced by 5% in 2018 than in 2017. Further, the fire burnt area was 0.019% in 2018–19, when compared to 0.046% in 2017-18. It clearly shows the burnt area due to forest fires in 2018–19 have reduced significantly by more than 58%. This also shows, the response time to extinguish the fire was reduced. Also, major fire incidences were minimized to abysmally low, as the local people were sensitised before the fire season. The incidences of fire lighting by the locals were also decreased. All the above efforts show, that community-based approaches have improved the reporting, extinguishing and controlling the forest fires to a phenomenal extent.

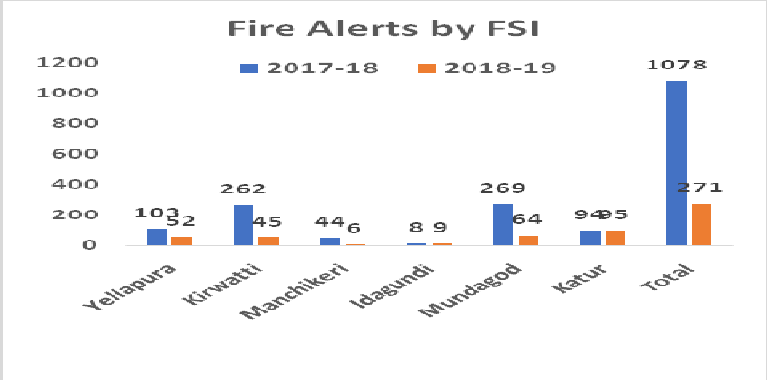

Figure 15

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